Fuel Cell Fork Lift Competition

Cat Lift Trucks, one of the largest fork lift companies in the world, is the sponsor for this event. Fuel cells have been developed that can replace the traditional batteries on electric fork lifts. This competition will model this real world application of hydrogen fuel cells.

The challenge is to build a model fork lift that will lift a weight and move that weight. There will be three awards – Hydrogen Efficiency, Engineering, and Artistic.

The Hydrogen Efficiency Award will be determined based on the ratio of the amount of weight lifted to the amount of hydrogen used. Grams of load/ml of hydrogen used.

The Engineering Award will be determined by a team of engineers who will read the students' journals and interview the teams regarding the methods, engineering techniques, and construction of the model fork lift.

The Artistic Award will be determined by votes from the attendees of the Fuel Cell Seminar. It is recommended that students work to provide creative models – especially in the loads they carry. Models will be on display in the Exhibit Hall of the Fuel Cell Seminar.

Rules:

Teams will receive two fuel cells, two motors, gas storage and various gears to complete this challenge.

Model Lifts must lift a load of the students' choice at least 6 cm and move the load 30 cm across a plastic platform. Loads will be weighed prior to each trail.

Each team will have 2 trials. Only the best score will be used.

A flat, plastic surface will be provided that is at least 50 cm x 40 cm. The surface will include a starting point and an ending point. Models do not have to go in a straight line, however, must pass the distance of 30 cm between the marked starting and ending positions and the load must be lifted 6 cm as it crosses the finish line..

At least one of the fuel cells MUST be used. Both fuel cells may be used. No other source of power can be used to either lift the load or move the fuel cell. The motor and other materials provided are not required equipment.

The model must fit into a plastic case that is 22 cm x 22 cm x 22 cm (the size of a basketball).